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# **WATER SUPPLY OUTLOOK FOR MONTANA**

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FEB -7 1967

CURRENT SERIAL RECORDS

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,  
and  
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF  
JAN. 1, 1967



## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

### PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83701
Montana	P. O. Box 855, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4001 Federal Building, Salt Lake City, Utah 84111
Washington	840 Boñ Marche Bldg., Spokane, Washington 99206
Wyoming	P. O. Box 340, Casper, Wyoming 82602

### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK  
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS  
For  
MONTANA

Report Prepared

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## MONTANA WATER SUPPLY OUTLOOK

January 1, 1967

The mountain snow pack is below average in Westcentral and Southwestern Montana. Snow accumulation is near average in the Madison, Gallatin and Upper Yellowstone River headwaters. Snow pack is above average in the Flathead River drainage.

The areas that presently have a low snow pack are nearly the same as those that experienced well below average runoff last season. Reservoir storage is generally below average and mountain soils are a little drier than usual in these areas. If a below average snow accumulation pattern continues, severe shortages of late season water supplies will occur.

Mountain soil moisture is generally good over the remainder of the state, as a result of warm weather well into November.

Thirteen snow pillows are in operation in Montana this season. Only month-end data will be reported in the January 1 and February 1 reports. Beginning with the March 1, 1967, Water Supply Outlook, daily water content values will be shown graphically for all stations from November 1.



# SNOW SURVEY DATA

AS OF DECEMBER 1, 1966

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

## COLUMBIA RIVER BASIN

### CLARK FORK RIVER

13C13	Black Pine Pillow	7100	12/1	SP	2.7	1.4	-
15C08	Hoodoo Basin Pillow	6000	Delayed Report			-	-

## MISSOURI RIVER BASIN

### MADISON RIVER

11E28	Lion Mountain Pillow	8760	Delayed Report			-	-
11E07	West Yellowstone Pillow	6700	12/1	SP	2.5	-	-

### GALLATIN RIVER

10D15	Bridger Bowl Pillow	7250	12/1	SP	3.8	3.9	-
11E29	Carrot Basin Pillow	9000	Delayed Report			-	-
10D13	Lick Creek Pillow	6860	12/1	SP	1.7	1.4	-
10D18	Maynard Creek Pillow	6210	12/1	SP	2.1	-	-
10D16	Shower Falls Pillow	8100	12/1	SP	5.5	3.3	-
11D13	Taylor Peaks Pillow	8500	Delayed Report			-	-

### JUDITH RIVER

10C06	Spur Park Pillow	8000	12/1	SP	4.8	-	-
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### UPPER YELLOWSTONE

9D06	Fisher Creek Pillow	9100	11/30	SP	8.9	-	-
10D07	Northeast Entrance Pillow	7400	11/29	SP	1.9	-	-

SP - Snow Pillow Observation - water content only.





# SNOW SURVEY DATA

AS OF JANUARY 1, 1967

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

## COLUMBIA RIVER BASIN

### FLATHEAD RIVER

13A02	Desert Mountain	5600	12/29	35	9.0	5.0	6.6*
14A03	Hell Roaring Divide	5770	12/30	62	17.7	8.3	-
13B13	Holbrook	4530	1/2	22	4.4A	1.0A	3.3*
13A05	Marias Pass	5250	12/22	26	7.4	4.9	8.0
13B02	Spotted Bear Mountain	7000	1/2	35	8.0A	3.2A	7.6*
13B11	Twin Creeks	3580	1/2	30	6.6A	1.2A	5.8*

### CLARK FORK RIVER

13C13	Black Pine	7100	12/29	17	3.2	2.8	-
13C13	Black Pine Pillow	7100	12/29	SP	4.3	2.2	-
13B10	Coyote Hill	4200	12/30	18	4.0	2.4	5.0*
15C08	Hoodoo Basin	6000	12/29	62	18.3	-	-
15C08	Hoodoo Basin Pillow	6000	12/31	SP	17.5	-	-
15C01	Hoodoo Creek	5900	12/29	59	16.6	-	-
15B02	Lookout	5250	12/29	56	15.6	12.5	17.6*
13C21	Lubrecht Forest No. 3	5450	12/31	11	2.0	1.6	3.3*
13C22	Lubrecht Forest No. 4	4650	12/31	5	1.0	1.2	1.8*
13C08	Lubrecht Forest No. 6	4040	12/31	6	1.0	0.8	1.9*
13C18	Spring Gulch	6000	1/2	20	3.4	2.6	4.8*
13C07	Storm Lake	7780	12/28	18	3.5	1.8	6.1*
13C01	Stuart Mountain	7400	1/2	43	11.6	8.3	11.6*
14B01	TV Mountain	6800	1/1	27	5.9	4.4	7.2*

### BITTERROOT RIVER

13D02	Gibbons Pass	7100	12/27	27	6.4	4.6	10.8*
14C04	Savage Pass	6600	12/28	33	8.2	-	-

A - Aerial Observation - water content estimated.

SP - Snow Pillow Observation - water content only.



# SNOW SURVEY DATA

AS OF JANUARY 1, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

## MISSOURI RIVER BASIN

### BEAVERHEAD RIVER

12E03	Camp Creek	6800	12/29	16	3.5	3.3	3.7
11E12	Kilgore	6200	12/27	16	4.0	2.0	4.3*

### JEFFERSON RIVER

12D01	Pipestone Pass	7200	12/28	10	1.6	1.0	2.4*
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### MADISON RIVER

11E09	Big Springs	6500	12/29	37	9.4	3.3	7.9
11E05	Hebgen Dam	6550	1/2	28	6.2	1.3	5.4
11E10	Island Park	6315	12/29	32	6.4	2.5	6.1
11E28	Lion Mountain Pillow	8760	Delayed Report			-	-
10E02	Norris Basin	7500	12/29	23	5.6	3.8	4.3*
11E08	Valley View	6500	12/29	33	7.6	3.4	5.5
11E07	West Yellowstone	6700	1/2	28	6.5	2.0	4.9
11E07	West Yellowstone Pillow	6700	12/31	SP	4.8	-	-

### GALLATIN RIVER

10D14	Arch Falls	7350	12/29	18	3.8	1.9	-
10D15	Bridger Bowl Pillow	7250	12/30	SP	7.5	5.8	-
11E29	Carrot Basin Pillow	9000	12/20	SP	12.8	-	-
10D04	Devil's Slide	8100	12/29	30	6.6	4.0	-
10D13	Lick Creek Pillow	6860	12/31	SP	3.4	2.0	-
10D18	Maynard Creek Pillow	6210	12/30	SP	4.2	-	-
10D16	Shower Falls Pillow	8100	12/29	SP	7.6	5.8	-
11D13	Taylor Peaks Pillow	8500	Delayed Report			-	-
11E06	Twenty-One Mile	7150	1/2	40	10.2	3.8	8.0

### MISSOURI RIVER (Main Stem)

12C05	Chessman Reservoir	6200	1/4	8	1.5	0.3	2.1
12C02	Ten Mile Lower	6600	1/4	15	3.0	1.5	3.4
12C03	Ten Mile Middle	6800	1/3	22	3.7	2.1	5.1
12C04	Ten Mile Upper	8000	1/3	24	4.8	2.7	6.3

SP - Snow Pillow Observation - water content only.







# SNOW SURVEY DATA

AS OF JANUARY 1, 1967

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

## JUDITH RIVER

10C06	Spur Park Pillow	8000	Delayed Report	-	-
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## UPPER YELLOWSTONE

10E03	Canyon	7750	12/30	28	6.2	4.6	6.0
10E06	East Entrance	7000	12/28	13	2.3	4.7	4.4*
9D06	Fisher Creek Pillow	9100	Delayed Report			-	-
9D05	Grizzly Peak	8400	3/3	24	6.5	5.2	4.0*
10E04	Lake Camp	7850	12/30	21	3.9	2.8	4.0*
10E01	Lupine Creek	7300	1/4	24	5.1	4.1	4.4*
10D07	Northeast Entrance	7400	12/30	16	3.4	1.8	3.9
10D07	Northeast Entrance Pillow	7350	12/30	SP	4.0	-	-
10E05	Sylvan Pass	7100	12/28	18	3.6	3.7	5.6*
10E07	Thumb Divide	7900	12/31	31	8.6	-	8.9*

SP - Snow Pillow Observation - water content only.



# SOIL MOISTURE DATA

AS OF JULY 1, 1966

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	** AVERAGE

## COLUMBIA RIVER BASIN

### Kootenai

15B15M	Baree Trail	3800	48	7.5	-	-	5.8	-
14A10M	Murphy Lake R.S.	3000	48	22.6	7/1	20.4	20.4	-
15A02M	Raven R.S.	3050	48	23.0	7/18	17.4	20.3	-

### Flathead

13A02M	Desert Mountain	5600	54	8.4	7/1	8.2	-	8.2
13A05M	Marias Pass	5250	54	6.5	-	-	5.3	5.2

### Clark Fork

13C13M	Black Pine	7100	48	10.0	7/1	8.5	-	-
13C15M	Georgetown Lake	6450	48	9.0	6/30	7.3	7.7	7.5
13B19M	Seeley Lake R.S.	4030	48	11.9	-	-	-	-
13C03M	Skalkaho Summit	7260	48	10.8	6/30	10.4	10.1	-

### Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	6/30	6.1	6.3	6.5
14C05M	Lolo Pass	5250	48	10.6	6/28	9.8	10.3	9.7

## MISSOURI RIVER BASIN

### Beaverhead

11E13M	Lakeview	6700	48	15.3	7/1	13.8	15.4	14.5
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### Madison

10D04M	Red Bluff	4800	40	4.7	6/28	1.6	-	-
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### Gallatin

10D15M	Bridger Bowl	7250	48	17.0	7/1	16.4	-	-
11D02M	College Site	4856	54	14.5	7/1	11.4	15.2	10.3
10D13M	Lick Creek	6860	48	18.8	6/30	18.8	-	-
11E06M	Twenty-One Mile	7150	48	10.0	6/28	8.4	9.2	8.3

### Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	7/5	10.8	10.8	10.8
12C08M	Stemple Pass	6350	48	5.9	6/29	5.2	5.1	5.2

### Yellowstone

10D11M	Battle Ridge	6020	48	17.6	7/1	14.8	15.5	14.6
10D07M	Northeast Entrance	7350	48	9.4	6/29	9.0	9.8	8.9





# SOIL MOISTURE DATA

AS OF AUGUST 1, 1966

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

## COLUMBIA RIVER BASIN

### Kootenai

15B15M	Baree Trail	3800	48	7.5	7/22	5.1	3.9	-
14A10M	Murphy Lake R.S.	3000	48	22.6	-	-	19.4	-
15A02M	Raven R.S.	3050	48	23.0	8/1	18.3	17.5	-

### Flathead

13A02M	Desert Mountain	5600	54	8.4	8/1	6.2	5.9	6.3
13A05M	Marias Pass	5250	54	6.5	-	-	-	3.8

### Clark Fork

13C13M	Black Pine	7100	48	10.0	7/29	8.1	-	-
13C15M	Georgetown Lake	6450	48	9.0	7/29	3.7	3.9	4.7
13B19M	Seeley Lake R.S.	4030	48	11.9	8/1	8.1	8.3	-
13C03M	Skalkaho Summit	7260	48	10.8	7/29	9.4	10.3	-

### Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	7/28	4.5	5.3	5.6
14C05M	Lolo Pass	5250	48	10.6	8/1	5.1	6.4	6.6

## MISSOURI RIVER BASIN

### Beaverhead

11E13M	Lakeview	6700	48	15.3	8/2	5.2	11.7	9.7
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### Madison

10D04M	Red Bluff	4800	40	4.7	7/27	1.1	-	1.2
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### Gallatin

10D15M	Bridger Bowl	7250	48	17.0	7/28	16.4	-	-
11D02M	College Site	4856	54	14.5	7/29	7.6	9.8	7.8
10D13M	Lick Creek	6860	48	18.8	7/26	17.4	-	-
11E06M	Twenty-One Mile	7150	48	10.0	7/28	3.7	6.1	5.0

### Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	7/29	8.6	9.4	9.4
12C08M	Stemple Pass	6350	48	5.9	7/29	4.0	4.7	4.8

### Yellowstone

10D11M	Battle Ridge	6020	48	17.6	7/28	10.5	11.1	10.7
10D07M	Northeast Entrance	7350	48	9.4	7/27	6.0	7.3	6.9

\*\*AVERAGE FOR PERIOD OF RECORD



# SOIL MOISTURE DATA

AS OF SEPTEMBER 1, 1966

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

## COLUMBIA RIVER BASIN

### Kootenai

15B15M	Baree Trail	3800	48	7.5	8/31	4.7	5.5	-
14A10M	Murphy Lake R.S.	3000	48	22.6	9/1	21.5	19.6	-
15A02M	Raven R.S.	3050	48	23.0	8/31	15.9	17.4	-

### Flathead

13A02M	Desert Mountain	5600	54	8.4	9/1	5.0	6.9	5.1
13A05M	Marias Pass	5250	54	6.5	9/14	1.2	3.3	3.6

### Clark Fork

13C13M	Black Pine	7100	48	10.0	8/30	8.5	-	-
13C15M	Georgetown Lake	6450	48	9.0	-	-	3.0	2.7
13B19M	Seeley Lake R.S.	4030	48	11.9	9/1	5.0	-	-
13C03M	Skalkaho Summit	7260	48	10.8	8/31	9.6	10.5	-

### Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	8/30	2.8	5.9	5.2
14C05M	Lolo Pass	5250	48	10.6	9/3	2.9	5.6	5.3

## MISSOURI RIVER BASIN

### Beaverhead

11E13M	Lakeview	6700	48	15.3	9/2	5.1	7.1	7.0
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### Madison

10D04M	Red Bluff	4800	40	4.7	8/25	1.2	1.2	1.4
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### Gallatin

10D15M	Bridger Bowl	7250	48	17.0	9/1	16.5	-	-
11D02M	College Site	4856	54	14.5	9/2	7.6	8.3	7.0
10D13M	Lick Creek	6860	48	18.8	8/30	16.9	-	-
11E06M	Twenty-One Mile	7150	48	10.0	8/28	2.0	3.6	2.8

### Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	8/26	8.7	9.6	9.0
12C08M	Stemple Pass	6350	48	5.9	9/2	3.7	4.3	4.9

### Yellowstone

10D11M	Battle Ridge	6020	48	17.6	9/1	8.9	11.1	9.2
10D07M	Northeast Entrance	7350	48	9.4	8/31	5.1	6.0	5.8

\*\*AVERAGE FOR PERIOD OF RECORD







# SOIL MOISTURE DATA

AS OF OCTOBER 1, 1966

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

## COLUMBIA RIVER BASIN

### Kootenai

15B15M	Baree Trail	3800	48	7.5	10/3	4.0	5.6	-
14A10M	Murphy Lake R.S.	3000	48	22.6	10/1	18.9	18.6	-
15A02M	Raven R.S.	3050	48	23.0	10/4	18.4	18.0	-

### Flathead

13A02M	Desert Mountain	5600	54	8.4	9/30	4.8	7.1	5.6
13A05M	Marias Pass	5250	54	6.5	10/10	3.5	5.1	3.8

### Clark Fork

13C13M	Black Pine	7100	48	10.0	9/30	8.2	-	-
13C15M	Georgetown Lake	6450	48	9.0	10/3	3.2	4.7	3.1
13B19M	Seeley Lake R.S.	4030	48	11.9	9/30	4.1	-	-
13C03M	Skalkaho Summit	7260	48	10.8	10/3	10.1	10.5	-

### Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	9/29	4.1	6.3	5.5
14C05M	Lolo Pass	5250	48	10.6	10/7	2.1	7.1	6.6

## MISSOURI RIVER BASIN

### Beaverhead

11E13M	Lakeview	6700	48	15.3	10/3	5.3	6.0	6.2
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### Madison

10D04M	Red Bluff	4800	40	4.7	9/22	1.5	2.3	2.0
11E07M	West Yellowstone	6700	48		9/29	3.2	-	-

### Gallatin

10D15M	Bridger Bowl	7250	48	17.0	10/4	16.4	13.7	-
11D02M	College Site	4856	54	14.5	9/30	7.6	11.9	7.3
10D13M	Lick Creek	6860	48	18.8	10/7	17.7	-	-
11E06M	Twenty-One Mile	7150	48	10.0	9/29	2.8	3.6	3.3

### Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	9/30	6.0	10.1	8.8
12C08M	Stemple Pass	6350	48	5.9	9/29	4.5	5.4	4.8

### Yellowstone

10D11M	Battle Ridge	6020	48	17.6	10/4	9.2	14.8	10.1
10D07M	Northeast Entrance	7350	48	9.4	10/12	5.8	8.1	7.1



# SOIL MOISTURE DATA

AS OF NOVEMBER 1, 1966

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

## COLUMBIA RIVER BASIN

### Kootenai

15B15M	Baree Trail	3800	48	7.5	11/2	5.0	5.3	-
14A10M	Murphy Lake R.S.	3000	48	22.6	11/1	18.6	18.9	-
15A02M	Raven R.S.	3050	48	23.0	11/1	18.1	17.7	-

### Flathead

13A02M	Desert Mountain	5600	54	8.4	10/31	6.8	6.7	6.0
13A05M	Marias Pass	5250	54	6.5	10/31	3.6	-	4.6

### Clark Fork

13C13M	Black Pine	7100	48	10.0	10/31	8.0	-	-
13C15M	Georgetown Lake	6450	48	9.0	11/1	3.5	4.4	3.2
13B19M	Seeley Lake R.S.	4030	48	11.9	11/3	3.9	8.8	-
13C03M	Skalkaho Summit	7260	48	10.8	11/1	9.9	10.4	-

### Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	11/1	5.1	6.0	5.8
14C05M	Lolo Pass	5250	48	10.6	10/28	2.8	6.8	6.0

## MISSOURI RIVER BASIN

### Beaverhead

11E13M	Lakeview	6700	48	15.3	11/1	5.7	5.8	6.0
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### Madison

10D04M	Red Bluff	4800	40	4.7	-	-	2.3	2.2
11E07M	West Yellowstone	6700	48		10/29	2.9	-	-

### Gallatin

10D15M	Bridger Bowl	7250	48	17.0	11/1	16.4	14.8	-
11D02M	College Site	4856	54	14.5	11/4	7.1	9.8	7.7
10D13M	Lick Creek	6860	48	18.8	10/31	18.3	-	-
12C08M	Stemple Pass	6350	48	5.9	11/2	3.6	4.7	4.2

### Yellowstone

10D11M	Battle Ridge	6020	48	17.6	11/1	8.8	13.3	11.3
10D07M	Northeast Entrance	7350	48	9.4	10/30	5.7	8.0	7.3







# SOIL MOISTURE DATA

AS OF DECEMBER 1, 1966

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

## COLUMBIA RIVER BASIN

### Kootenai

15B15M	Baree Trail	3800	48	7.5	12/1	6.9	6.3	-
14A10M	Murphy Lake R.S.	3000	48	22.6	12/1	19.4	19.3	-
15A02M	Raven R.S.	3050	48	23.0	12/1	21.1	20.3	-

### Flathead

13A02M	Desert Mountain	5600	54	8.4	-	-	-	-
13A05M	Marias Pass	5250	54	6.5	11/30	3.9	5.3	4.8

### Clark Fork

13C13M	Black Pine	7100	48	10.0	12/2	8.0	-	-
13C15M	Georgetown Lake	6450	48	9.0	12/5	3.5	4.2	3.3
13B19M	Seeley Lake R.S.	4030	48	11.9	12/1	5.6	9.7	5.2
13C03M	Skalkaho Summit	7260	48	10.8	-	-	-	-

### Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	11/28	4.7	5.7	5.5
14C05M	Lolo Pass	5250	48	10.6	11/25	2.3	7.4	6.5

## MISSOURI RIVER BASIN

### Beaverhead

11E13M	Lakeview	6700	48	15.3	12/1	7.0	6.1	6.7
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### Madison

10D04M	Red Bluff	4800	40	4.7	12/2	2.0	1.7	-
11E07M	West Yellowstone	6700	48		11/28	3.4	-	-

### Gallatin

10D15M	Bridger Bowl	7250	48	17.0	11/29	16.4	14.5	-
11D02M	College Site	4856	54	14.5	12/2	9.9	10.1	8.9
10D13M	Lick Creek	6860	48	18.8	11/29	18.2	12.6	-
11E06M	Twenty-One Mile	7150	48	10.0	11/28	2.4	2.7	2.7

### Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	12/1	5.6	9.2	8.3
12C08M	Stemple Pass	6350	48	5.9	11/30	3.7	4.6	4.2

### Yellowstone

10D11M	Battle Ridge	6020	48	17.6	12/2	11.5	13.6	12.3
10D07M	Northeast Entrance	7350	48	9.4	11/30	5.7	7.8	7.3



# SOIL MOISTURE DATA

AS OF JANUARY 1, 1967

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

## COLUMBIA RIVER BASIN

### Kootenai

15B15M	Baree Trail	3800	48	7.5	-	-	-	-
14A10M	Murphy Lake R. S.	3000	48	22.6			19.3	-
15A02M	Raven R. S.	3050	48	23.0			19.7	-

### Flathead

13A02M	Desert Mountain	5600	54	8.4	12/29	8.0	7.2	6.7
13A05M	Marias Pass	5250	54	6.5	12/31	4.9	-	4.8

### Clark Fork

13C13M	Black Pine	7100	48	10.0	12/29	7.9	4.8	-
13C15M	Georgetown Lake	6450	48	9.0	12/28	3.4	3.8	3.2
13B19M	Seeley Lake R. S.	4030	48	11.9	12/3	9.3	9.9	6.1
13C03M	Skalkaho Summit	7260	48	10.8	-	-	-	-

### Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	12/27	4.9	4.9	5.4
14C05M	Lolo Pass	5250	48	10.6	12/23	3.5	6.3	6.6

## MISSOURI RIVER BASIN

### Beaverhead

11E13M	Lakeview	6700	48	15.3	1/3	6.5	6.1	7.9
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### Madison

10D04M	Red Bluff	4800	40	4.7			1.8	-
11E07M	West Yellowstone	6700	48		12/27	2.8	-	-

### Gallatin

10D15M	Bridger Bowl	7250	48	17.0	12/30	16.1	14.4	-
11D02M	College Site	4856	54	14.5	12/30	10.3	11.4	9.0
10D13M	Lick Creek	6860	48	18.8	12/31	18.4	12.3	-
11E06M	Twenty-One Mile	7150	48	10.0	1/3	2.6	3.1	2.8

### Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8			9.1	8.2
13C08M	Stemple Pass	6350	48	5.9	12/29	3.7	4.4	4.2

### Yellowstone

10D11M	Battle Ridge	6020	48	17.6	12/30	11.0	13.3	12.4
10D07M	Northeast Entrance	7350	48	9.4	12/30	5.6	7.7	7.2

\*\*AVERAGE FOR PERIOD OF RECORD







# RESERVOIR STORAGE DATA

AS OF DECEMBER 31, 1966

(1000 Acre Feet)

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE		
			THIS YEAR	LAST YEAR	AVERAGE

## COLUMBIA RIVER BASIN

Flathead	Hungry Horse	3,428.0	2,012.0	2,839.0	2,954.5**
	Flathead Lake	1,791.0	1,578.0	1,448.0	1,297.0
	Camas (Sum of 4)	45.2	22.6	27.3	30.7
	Mission Valley (Sum of 8)	100.3	23.0	53.9	29.4
Clark Fork	Georgetown Lake	31.0	23.1	28.8	25.9
	Noxon Rapids	334.6		325.1	-
Bitterroot	Como	34.9	3.1	-	8.8
	Painted Rocks	31.7	14.9	-	15.1**

## MISSOURI RIVER BASIN

Beaverhead	Clark Canyon	328.9	94.3	150.4	-
	Lima	84.0	13.4	43.7	25.6
Ruby	Ruby	38.8		-	15.7**
Madison	Hebgen Lake	377.5	169.2	222.3	188.0
	Ennis Lake	41.0	38.9	39.3	36.9
Gallatin	Middle Creek	8.0	2.1	1.2	3.0**
Missouri	Canyon Ferry	2,043.0	1,460.0	1,641.0	1,628.5**
	Hauser & Helena	61.9	63.0	61.3	55.3
	Lake Helena	10.4	10.8	10.2	8.3
	Holter Lake	81.9	81.9	68.7	71.2
	Smith River	10.7		8.4	5.0**
	Ackley Lake	5.8		-	3.6
	Durand	7.0		6.8	3.7**
	Martinsdale	23.1		12.4	7.6**
	Deadman's Basin	72.2		65.0	40.5**
	Fort Peck	19,410.0	15,790.0	17,280.0	10,661.1
Sun	Gibson	105.0	16.8	60.4	52.5
	Willow Creek	32.3	16.0	23.2	18.8
	Pishkun	32.0	16.2	18.8	18.8
Marias	Lower Two Medicine			-	0.3
	Four Horns	19.2		12.3	10.5
	Swift			-	17.4
	Lake Frances	112.0	71.0	-	91.9
Milk	Tiber	1,347.0	498.2	678.7	524.4**
	Fresno	127.2	84.0	88.8	61.9
	Nelson	66.8	52.6	53.5	38.4
	Lake Sherburne	66.1	14.2	8.7	17.1
Yellowstone	Mystic Lake	20.8	13.5	15.8	13.9
	Tongue River	68.0		-	11.5
	Cooney	27.5		17.0	10.5**
Big Horn	Yellowtail	1,356.0	647.7	148.2	-



# Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service  
Region 1, Missoula, Montana

U. S. Geological Survey  
Helena, Montana

U. S. Army Corps of Engineers  
Portland, Oregon  
Seattle, Washington  
Omaha, Nebraska

U. S. Indian Irrigation Service  
St. Ignatius, Montana

U. S. Weather Bureau  
Helena, Montana

U. S. Bureau of Sports Fisheries  
and Wildlife  
Red Rock Lakes Refuge  
Monida, Montana

U. S. Bureau of Reclamation  
Billings, Montana  
Boise, Idaho

U. S. Soil Conservation Service  
Montana, Wyoming, Idaho

Soil and Water Conservation Districts  
Montana Counties

U. S. Bonneville Power Administration  
Portland, Oregon

U. S. National Park Service  
Yellowstone National Park  
Glacier National Park

Montana Power Company  
Butte, Montana

State Water Conservation Board  
Helena, Montana

North Montana Branch Station  
Agricultural Experiment Station  
Havre, Montana

Montana State University  
Agricultural Experiment Station  
Bozeman, Montana

University of Montana  
School of Forestry  
Missoula, Montana

Johnson Flying Service, Inc.  
Missoula, Montana

Water Rights Branch, Dept. of  
Lands and Forests  
Victoria, British Columbia

Department of Northern Affairs  
and National Resources  
Calgary, Alberta

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